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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,605

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Hannu Mäkelä

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EXAMINER

KONG, SZE-HON

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,605	<b>Applicant(s)</b> MÄKELÄ, HANNU	
	<b>Examiner</b> SZE-HON KONG	<b>Art Unit</b> 3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 10/23/2008 have been fully considered but they are not persuasive.

On page 8 and 9 of the Applicant's Response, Applicant argues that Kita has "no mention concerning the stated stopping in a predetermined position", and "nothing to do with trucks being driven against any physical obstacle".

The Examiner respectfully disagrees with the Applicant. Kita discloses the truck 12 is close to the front truck, the speed is reduced from high speed to low speed (col. 5, lines 10-13); a tape, a physical obstacle, is driven against to indicate and confirms the branch position to stop the truck (col. 5, lines 28-34); and the truck travels, reduces speed and stops at a predetermined position, 100mm distance between trucks (col. 8, lines 60-64). These, as cited in the previous action reads on the claimed invention because the truck is being driven against a physical obstacle and stopping in a predetermined position.

2. Applicant's arguments, see pages 9, lines 7-17 and page 10, filed 10/23/2008, with respect to the rejection(s) of claim(s) 1, 7 and 10 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found references cited below.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648), Maier et al. (5,211,115) and Tsutsui et al. (6,317,671).

For claim 1, 4 and 7, Kita discloses a system and method for stopping an unmanned mine vehicle in a predetermined position (Col. 5, lines 13-34), the system comprising: a control unit including at least a first control unit in the mine vehicle; a second control unit outside the mine vehicle; a data transmission connection between said control units; the mine vehicle being controlled by the control system (Col. 3, lines 39-56), and the method comprising: driving the mine vehicle, controlled by said control system, towards a predetermined position; monitoring at least a speed of the mine vehicle (Col. 3, lines 33-56), driving the mine vehicle at a speed significantly lower than a normal driving speed against at least one physical obstacle that is arranged in a predetermined position (Col. 5, lines 9-12, col. 8, lines 55-64 and col. 11, lines 1-8).

Kita does not disclose monitoring a speed of the driving power transmission of the mine vehicle, driving intentionally against a stationary obstacle and means for stopping the driving power of the mine vehicle when a

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ratio of the speed of the driving power transmission to the speed of the mine vehicle exceeds a predetermined limit value. Maier discloses a stationary barrier 17 placed in the stopping area and stops the vehicle at the stopping point when the vehicle drives against the barrier (col. 3, lines 41-57). Tsutsui discloses a rotational speed sensor for detecting a speed of the clutch, that is, an input rotational speed of the transmission (col. 8, lines 49-60) and releasing control transmission of an engine driving force when a vehicle is stopped in a drive range, when the speed of the driving power transmission is higher than the speed of the vehicle, to engage into a neutral state (col. 1, lines 40-58). It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching of Kita, Maier and Tsutsui to accurately position and stop slippage to better fuel economy of the vehicle.

For claim 3 and 8, Kita discloses the system comprises members for monitoring speed of the traction wheels of the vehicle (Col. 5, lines 58-68), monitoring a rotation speed of a motor of the mine vehicle (Col. 10, lines 47-52); and stopping the mine vehicle when the ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined (Col. 5, lines 13-23).

Kita does not disclose the vehicle is driven at a given gear of a driving power transmission. Tsutsui discloses the automatic transmission is driven in the first speed state of the forward range before the stop of the vehicle (col. 8, lines 11-18). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to include members for

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determining a speed of the driving power transmission and drive the vehicle at a given gear of a driving power transmission against the obstacle, taught by Tsutsui to reduce and stop slippage and better fuel economy of the vehicle.

3. Claims 2, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648), Maier et al. (5,211,115), Tsutsui et al. (6,317,671), and further in view of Kushi et al. (5,099,942).

For claims 2, 10 and 12, Kita discloses a system for stopping an unmanned mine vehicle in a predetermined position, the system comprising: a control system including at least a control unit in the mine vehicle (Col. 3, lines 33-56); at least one physical obstacle arranged in a predetermined position, against which the mine vehicle is arranged to be driven (Col. 5, lines 9-12, col. 8, lines 55-64 and col. 11, lines 1-8); and monitoring the speed of traction wheels (Fig. 20 and col. 15, lines 11-14).

Kita does not specifically disclose means for determining tractive resistance of the mine vehicle when said obstacle is approached; driving intentionally against a stationary obstacle and means for stopping the driving power of the mine vehicle when the tractive resistance exceeds a predetermined limit value. Maier discloses a stationary barrier 17 placed in the stopping area and stops the vehicle at the stopping point when the vehicle drives against the barrier (col. 3, lines 41-57). Kushi discloses a traction control device terminates the supply of fuel to the engine for stopping the driving power of the vehicle when the speed difference between a rotating speed of a free running wheel, a non-slip

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wheel representing the actual speed of the vehicle and a rotating speed of a driven wheel, a driving wheel with a slip condition and a tractive resistance exceeded a value (Abstract and col. 1, line 65 – col. 2, line 12). It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching of Kita, Maier and Kushi to accurately position and stop slippage and better fuel economy of the vehicle.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648), Maier et al. (5,211,115) and Tsutsui et al. (6,317,671) as applied to claim 1 above, and further in view of Kanazawa et al. (JP63308611).

For claim 5, Kita does not specifically disclose a method comprising driving at least one wheel of the mine vehicle against the obstacle. Kanazawa discloses driving the frame of the mine vehicle against the obstacle (Abstract). It is well known and obvious in the art that having any specific part of the vehicle driving against the obstacle does not present any novelty or inventive entity. It would have been obvious for one of ordinary skill in the art to modify the invention of Kita to drive the frame of the mine vehicle against the obstacle, taught by Kanazawa to stop and trigger the stopping behavior of the vehicle.

For claim 6, Kita does not specifically disclose a method comprising driving the frame of the mine vehicle against the obstacle. Kanazawa discloses driving the frame of the mine vehicle against the obstacle (Abstract). It would

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have been obvious for one of ordinary skill in the art to modify the invention of Kita to drive the frame of the mine vehicle against the obstacle, taught by Kanazawa to stop and trigger the stopping behavior of the vehicle.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648), Maier et al. (5,211,115) and Tsutsui et al. (6,317,671) as applied to claim 7 above, and further in view of Dyke (3,068,716).

For claim 9, Kita discloses the system comprises means for monitoring a rotation speed of the motor of the mine vehicle; and the system is arranged to stop the mine vehicle (Col. 5, lines 13-23). Kita does not disclose the system stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used. Dyke discloses the system stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used (Col. 1, lines 29-55). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit valued defined according to a gear used, taught by Dyke to ensure a stable vehicle behavior.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648), Maier et al. (5,211,115), Tsutsui et al. (6,317,671) and

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Kushi et al. (5,099,942) as applied to claim 10 above, and further in view of Dyke (3,068,716).

For claim 11, Kita discloses the system comprises means for determining a speed of the mine vehicle (Col. 3, lines 46-56); the system comprises means for monitoring a rotation speed of a motor of the mine vehicle (Col. 5, lines 58-68).

Kita does not disclose the system is arranged to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used. Dyke discloses the system is arranged to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used (Col. 1, lines 29-55). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used, taught by Dyke to reduce and stop slippage and better fuel economy of the vehicle.

7. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648), Maier et al. (5,211,115) and Tsutsui et al. (6,317,671) as in claim 7 above, and further in view of Fournier et al. (5,850,341).

For claim 13, Kita does not specifically disclose at least one physical stationary reference obstacle arranged in a location known to the control system,

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and when the mine vehicle is driven against the reference obstacle in the known location, the location of the mine vehicle is updated for the control system. Maier discloses a physical stationary reference obstacle is in a known location to the control system, where the location of the barrier 17 is known to the carrier (Fig. 2). Fournier discloses a GPS receiver for constantly monitoring the position of the vehicle (fig. 2, 4 and col. 6, lines 14-16). It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching of Kita, Maier and Fournier to monitor the location to better manage the vehicles.

For claims 14 and 15, Kita does not disclose at least one loading vehicle provided with a bucket and at least one transport vehicle provided with a platform, the system comprises a loading site wherein the loading vehicle is arranged to load broken rock material to the transport vehicle, the loading site comprises a first physical stationary obstacle against which the transport vehicle is driven and a second physical obstacle against which the loading vehicle is driven, and the positions of the transport vehicle and the loading vehicle relative to each other is determined by the relative positions of the first and second physical stationary obstacles. Fournier discloses a wheel loader with a bucket remove ore material from one place and transfer the material to a transport truck (fig. 1 and col. 5, lines 47-58). It would have been obvious to arrange physical stationary obstacles at the site for the transport vehicle and the loading vehicle in view of the teaching of Kita, Maier and Tsutsui as discussed above to stop the

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vehicle accurately in their respected position; and the distance and/or relative position of the vehicles and/or unloading site have to be appropriate for proper loading/unloading operation and therefore the physical stationary obstacles will have to be place in relative positions. Also, Fournier discloses transporting ore material, but would have been obvious that the wheel loader can transport any material such as broken rocks. It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching of Kita, Maier, Tsutsui and Fournier to accurately position the vehicles in a work site.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SZE-HON KONG whose telephone number is (571)270-1503. The examiner can normally be reached on 7:30AM-5PM Mon-Fri, Alt. Fri. Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

1/17/2009

/SZE-HON KONG/  
Examiner, Art Unit 3661

/Thomas G. Black/

Supervisory Patent Examiner, Art Unit 3661